

Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 3336 Flat Creek

Submitted by
Pickett Ray and Silver

To
Missouri Department of Natural Resources
Water Protection Program

Date Received: June 5, 2007

Field Data Sheets for Recreational Use Stream Surveys**Missouri Data Sheet A - Water Body Identification****I. Water Body Information** (for water body being surveyed)

Water Body Name (from USGS 7.5' quad): Flat Creek	
Missouri Waterbody Identification (WBID) Number: 3336 - Flat Creek	
8-digit HUC: 7140103	County: Franklin
Upstream Legal Description (from Table H): 43N, 01W, Section 27	
Downstream Legal Description (from Table H): Mouth	
Number of sites evaluated 3	
List all sites numbers, listed consequently upstream to downstream: 3336-1, 3336-2, 3336-3	

Site Locations Map(s): Attach a map of entire segment with assessment sites clearly labeled. Mark any other items that may be of interest. **Attached**

II. Subsegmentation (fill this section out only in cases where subsegmentation is being proposed)

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Upstream Coordinates: UTM X Y		Downstream Coordinates: UTM X Y	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode		Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± _____ Feet or ± _____ Meters		
PDOP		± _____ Feet or ± _____ Meters	

III. Discharger Facility Information (list all permitted dischargers on the stream)

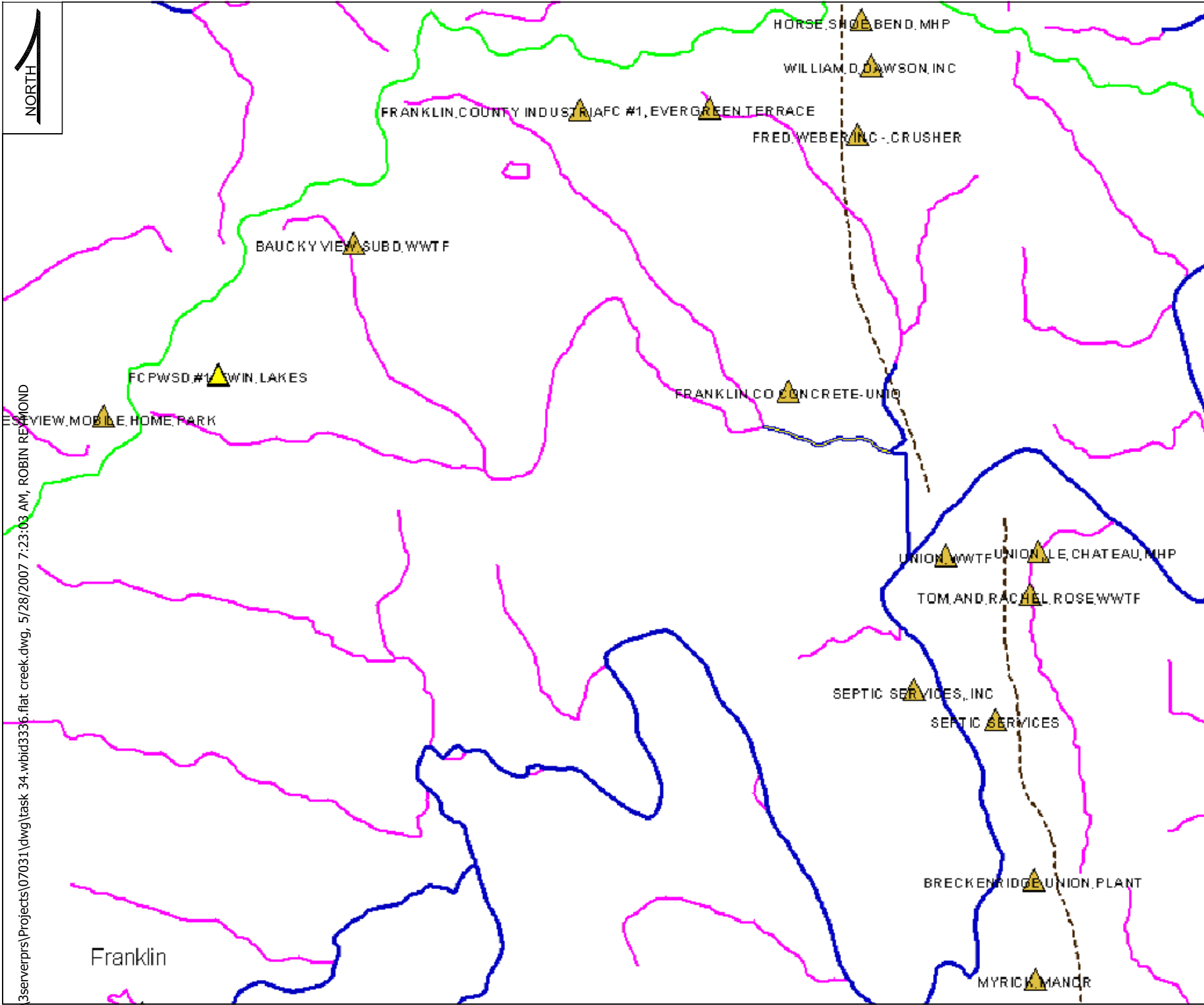
Discharger Facility Name(s): FCPWSO #1 Twin Lakes
Discharger Permit Number(s): Mo 0114189

IV. UAA Surveyor (please print legibly)

Name of Surveyor Robin Reymond	Telephone Number: 636-397-1211
Organization/Employer: Pickett, Ray & Silver, Inc.	
Position: Field Team Leader	

Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.

Signed: Robin ReymondDate: 5/9/07



\\3serverpr\Projects\07031\dwg\task 34.wbid3336.flat creek.dwg, 5/28/2007 7:23:03 AM, ROBIN REAYMOND



GRAPHIC SCALE

Not to Scale

PRS Job Number: 07031.MODN.00E

Drawn By: RLR Date: 05-24-07

Checked By: JCV Date: 05-24-07

WBID #: 3336

Name: Flat Creek

County: Franklin

GIS Map

PICKETT RAY & SILVER

Civil Engineers Land Surveyors Natural Resources

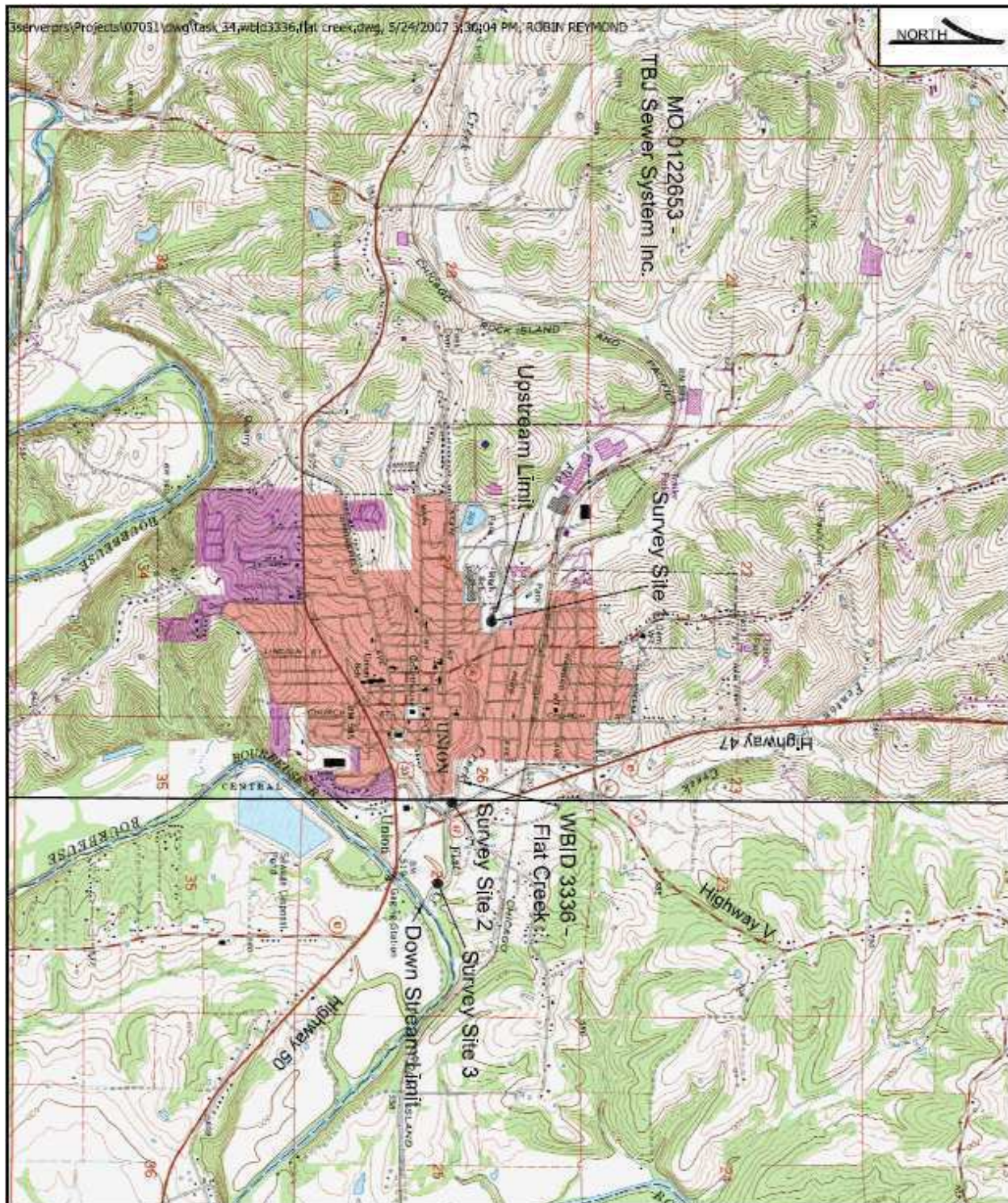
Address: Phone: (636) 397-1211

333 Mid Rivers Mall Drive Fax: (636) 397-1104

St. Peters, Missouri 63376 Website: www.prs3.com

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PICKETT RAY & SILVER

Civil Engineers Land Surveyors Natural Resources

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WBID #: 3336
Name: Flat Creek
County: Franklin
USGS Location Map

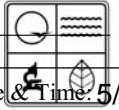


GRAPHIC SCALE
Not to Scale

PRS Job Number: 07031 MODN.00E
Drawn By: RLR Date: 05-24-07
Checked By: JCV Date: 05-24-07

WBID# 3336

Site# 1



Missouri
Department of
Natural Resources

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Date & Time: 5/20/2014 1:50 PM	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): PRS - RR/MC	Church Street just downstream of bridge
Current Weather Conditions: sunny 82°F	Facility Name: FCPWSO #1 Twin Lakes
Weather Conditions for Past 10 days: rain/sun	Permit Number: MO 0114189
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X:		Y:	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode		Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other Real Time Differential Correction with	X
Real Time Differential Processing		Post Processing	
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____ ± _____ Feet or ± _____ Meters	
EPE	± _____ Feet or ± _____ Meters		
PDOP	5.3		

Photos:

Upstream Photos		Downstream Photos		Other Photos	
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
See Attached Photos					

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use <i>Data Sheet D- Recreational Use Interview</i> when conducting interviews.)				

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input checked="" type="checkbox"/> City/county parks	<input checked="" type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input checked="" type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Comments:				

Indications of Human Use*: (attach photos)

<input type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input checked="" type="checkbox"/> Fishing Tackle	<input checked="" type="checkbox"/> Other: Graffiti	
Comments: Trash					

* Page Two – Data Sheet B for WBID #3336-1 :

Stream Morphology:



Upstream View
Department of
Natural Resources

Is there any water present at this view? ☒ Yes ☐ No

If so, is there an obvious current? ☒ Yes ☐ No

Select one of the following **channel features**:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN Bridge	0	10		.30	.30
POOL					

Downstream View's Physical Dimensions: Is there any water present at this view? ☐ Yes ☐ No

Approximate percentage of channel features for entire segment site

If so, is there an obvious current? ☐ Yes ☐ No

Select one of the following **channel features**:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE 25%					
RUN 65%					
POOL 10%					

Substrate*: (These values should add up to 100%.)

10	% Cobble	15	% Gravel		% Sand	15	% Silt	15	% Mud/Clay	40	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

Heavy moss and algae growth on rock substrate.

Water Characteristics*: (Mark all that apply.)

Odor:	<input checked="" type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input checked="" type="checkbox"/> Gray murky	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input checked="" type="checkbox"/> Solids trash	<input type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input checked="" type="checkbox"/> Oil	<input checked="" type="checkbox"/> Scum	<input checked="" type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments () to this form.

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.

Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.

Surveyor's Signature: Robin Reymond Date of Survey: 5/9/07

Organization: Pickett, Ray, & Silver, Inc. Position: _____

Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: <u>3336</u> Site #: <u>1</u> Weather Conditions: <u>sunny 82°F</u> GPS Location: UTM X: <u>673540.451m</u> UTM Y: <u>4257538.765m</u> Horizontal Accuracy Estimate (GPS Data Quality): <u>+/- N/A</u> (feet) PDOP: <u>5.3</u> Average Stream Width: <u>6.6</u> (meters) Length of Survey Segment: <u>150</u> (meters) Field Staff: <u>PRS - RR/MC</u>														Dissolved Oxygen					
														Dissolved Oxygen: <u>11.31</u> (mg/L)					
														Dissolved Oxygen: _____ (% sat)					
														Specific Cond: _____ (µS/cm)					
														Water Temperature: <u>24.5</u> (°C)					

Transect Cross-Section																						
	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
1	0	.10	0	.35	.5	.30	0	.10	0	.25	0.5	.10	0	.10	0.4	.10	0	.10	0	.10	.8	.01
2	.8	.10	1.3	.20	1.0	.36	.75	.10	.75	.37	1.0	.10	.4	.20	0.6	.10	.35	.22	.8	.10	1.6	.03
3	1.6	.30	2.6	.53	1.5	.39	1.5	.13	1.5	.39	1.5	.13	.8	.28	0.8	.12	.70	.26	1.6	.10	2.4	.10
4	2.4	.30	3.9	.60	2.0	.43	2.25	.14	2.25	.39	2.0	.14	1.2	.28	1.0	.13	1.05	.34	2.4	.16	3.2	.02
5	3.2	.42	5.2	.55	2.5	.30	3.0	.17	3.0	.39	2.5	.15	1.6	.28	1.2	.11	1.4	.34	3.2	.24	4.0	.01
6	4.0	.42	6.5	.43	3.0	.28	3.75	.19	3.75	.35	3.0	.19	2.0	.17	1.4	.11	1.75	.36	4.0	.30	4.8	.07
7	4.8	.43	7.8	.43	3.5	.26	4.5	.14	4.5	.34	3.5	.20	2.4	.11	1.6	.11	2.1	.40	4.8	.25	5.6	.04
8	5.6	.41	9.1	.40	4.0	.20	5.25	.14	5.25	.30	4.0	.20	2.8	.11	1.8	.11	2.45	.40	5.6	.20	6.4	.00
9	6.4	.40	10.4	.26	4.5	.15	6.0	.15	6.0	.28	4.5	.33	3.2	.10	2.0	.11	2.8	.40	6.4	.15	7.2	.09
10	7.2	.35	11.7	.15	5.0	.16	6.75	.13	6.75	.13	5.0	.20	3.6	.20	2.2	.10	3.15	.40	7.2	.10	8	.03
11	8	.23	13	.13	5.5	.10	7.5	.11	7.5	.10	5.5	.11	4	.10	2.4	.10	3.5	.30	8	.10		
Width/Median Depth	8	0.35	13	0.40	5.5	0.28	7.5	0.14	7.5	0.34	5.5	0.15	4	0.17	2.4	0.11	3.5	0.34	8	0.15	8	0.03
Feature Type (riffle, run, or pool)	Run		Pool		Run		Riffle		Run		Run		Run		Riffle		Run		Run		Riffle	

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.
 GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

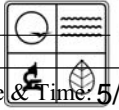
Signed: Robin Reymond Date: 5/9/07

Site Maximum **0.60**

Site Median **0.18**

WBID# 3336

Site# 2



Missouri
Department of
Natural Resources

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Date & Time: 5/20/2014	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): PRS - RR/MC	Near ball fields on Old Farm Road
Current Weather Conditions: sunny 82°F	Facility Name: FCPWSO #1 Twin Lakes
Weather Conditions for Past 10 days: rain/sun	Permit Number: MO 0114189
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: 674384.379m		Y: 4257399.99m	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode		Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other Real Time Differential Correction with	X
Real Time Differential Processing		Post Processing	
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____ ± _____ Feet or ± _____ Meters	
EPE	± _____ Feet or ± _____ Meters		
PDOP	5.9		

Photos:

Upstream Photos		Downstream Photos		Other Photos	
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
See Attached Photos					

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use <i>Data Sheet D- Recreational Use Interview</i> when conducting interviews.)				

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input checked="" type="checkbox"/> City/county parks	<input checked="" type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input checked="" type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Comments:				

Indications of Human Use*: (attach photos)

<input type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input checked="" type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:	
Comments:					

* Page Two – Data Sheet B for WBID #3336-2 :

Stream Morphology:



Upstream View
Department of
Natural Resources

Is there any water present at this view? ☐ Yes ☐ No

If so, is there an obvious current? ☐ Yes ☐ No

Select one of the following **channel features**:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

Downstream View's Physical Dimensions: Is there any water present at this view? ☐ Yes ☐ No

Approximate percentage of channel features for entire segment site

If so, is there an obvious current? ☐ Yes ☐ No

Select one of the following **channel features**:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE 55%					
RUN 35%					
POOL 10%					

Substrate*: (These values should add up to 100%.)

25	% Cobble	25	% Gravel	% Sand	% Silt	% Mud/Clay	50	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

15% vegetation on gravel bars - moderate moss and algae growth on rock substrate.

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments () to this form.

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.

Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.

Surveyor's Signature: Robin Reymond Date of Survey: 5/9/07

Organization: Pickett, Ray, & Silver, Inc. Position:

Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: <u>3336</u> Site #: <u>2</u> Weather Conditions: <u>sunny 82° F</u> GPS Location: UTM X: <u>674384.519m</u> UTM Y: <u>4257399.399m</u> Horizontal Accuracy Estimate (GPS Data Quality): <u>+/- N/A</u> (feet) PDOP: <u>5.9</u> Average Stream Width: <u>8.2</u> (meters) Length of Survey Segment: <u>165</u> (meters) Field Staff: <u>PRS - RR/MC</u>														Dissolved Oxygen Dissolved Oxygen: <u>10.80</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>244</u> (°C)										
Transect Cross-Section																								
	01		02		03		04		05		06		07		08		09		10		11			
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)		
1	0	.10	0	.12	0	.22	0	.10	>1	0	.10	0	.10	0	.10	0	.10	0	.10	0	.10	0	.10	
2	.9	.23	.9	.21	8	.33	.9	.11	>1	.75	.10	.65	.10	.1	.10	.8	.45	1.3	.13	0.5	.10			
3	1.8	.30	1.8	.13	1.6	.33	1.8	.10	>1	1.5	.10	1.3	.11	.2	.10	1.6	.77	2.6	.10	1.0	.11			
4	2.7	.33	2.7	.15	2.4	.28	2.7	.10	>1	2.25	.10	1.95	.10	.3	.11	2.4	.70	3.9	.10	1.5	.21			
5	3.6	.34	3.6	.15	3.2	.25	3.6	.08	>1	3.0	.11	2.6	.03	.4	.10	3.2	.50	5.2	.13	2.0	.40			
6	4.5	.30	4.5	.15	4.0	.20	4.5	.06	>1	3.75	.04	3.25	.04	.5	.10	4.0	.45	6.5	.10	2.5	.37			
7	5.4	.25	5.4	.10	4.8	.20	5.4	.10	>1	4.5	.03	3.9	.03	.6	.10	4.8	.40	7.8	.09	3.0	.31			
8	6.3	.17	6.3	.10	5.6	.20	6.3	.10	>1	5.25	.03	4.55	.03	.7	.12	5.6	.20	9.1	.00	3.5	.26			
9	7.2	.13	7.2	.10	6.4	.15	7.2	.10	>1	6.0	.10	5.2	.10	.8	.11	6.4	.20	10.4	.00	4.0	.19			
10	8.1	.10	8.1	.16	7.2	.10	8.1	.12	>1	6.75	.10	5.85	.10	.9	.12	7.2	.10	11.7	.10	4.5	.10			
11	9	.10	9	.10	8	.10	9	.10		7.2	.10	6.5	.10	1.0	.12	8	.10	13	.14	5	.10			
Width/Median Depth	9	0.23	9	0.13	8	0.20	9	0.10	9	-	8	0.10	7	0.10	5	0.10	8	0.40	13	0.10	5	0.19		
Feature Type (riffle, run, or pool)	Run		Run		Run		Riffle		Pool		Riffle		Riffle		Riffle		Pool		Riffle		Riffle			

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.
 GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

Signed: **Robin Reymond**

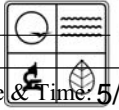
Date: **5/9/07**

Site Maximum 1.00

Site Median 0.11

WBID# 3336

Site# 3



Missouri
Department of
Natural Resources

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Date & Time: 5/20/2014	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): PRS - RR/MC	Old Country Farm Rd. - Upstream of confluence with Bourbeuse River
Current Weather Conditions: sunny 85°F	Facility Name: FCPWSO #1 Twin Lakes
Weather Conditions for Past 10 days: rain/sun	Permit Number: MO 0114189
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: 674914.426m		Y: 4257399.99m	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode		Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other Real Time Differential Correction with	X
Real Time Differential Processing		Post Processing	
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____ ± _____ Feet or ± _____ Meters	
EPE	± _____ Feet or ± _____ Meters		
PDOP	2.6		

Photos:

Upstream Photos		Downstream Photos		Other Photos	
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
See Attached Photos					

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use <i>Data Sheet D- Recreational Use Interview</i> when conducting interviews.)				

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input checked="" type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Comments:				

Indications of Human Use*: (attach photos)

<input type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input checked="" type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input checked="" type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:	
Comments:					

* Page Two – Data Sheet B for WBID #3336-3 :

Stream Morphology:



Upstream View
Missouri Department of Natural Resources

Is there any water present at this view? ☐ Yes ☐ No

If so, is there an obvious current? ☐ Yes ☐ No

Select one of the following **channel features**:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

Downstream View's Physical Dimensions: Is there any water present at this view? ☒ Yes ☐ No

Approximate percentage of channel features for entire segment site

If so, is there an obvious current? ☒ Yes ☐ No

Select one of the following **channel features**:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE 5%					
RUN 70%					
POOL 20% - Barboneuse River				>1	>1

Substrate*: (These values should add up to 100%.)

15	% Cobble	25	% Gravel		% Sand	25	% Silt	25	% Mud/Clay	10	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

15% woody vegetation on gravel bars.

Water Characteristics*: (Mark all that apply.)

Odor:	<input checked="" type="checkbox"/> Sewage	<input checked="" type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input checked="" type="checkbox"/> Green murky	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input checked="" type="checkbox"/> Oil	<input checked="" type="checkbox"/> Scum	<input checked="" type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments () to this form.

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.

Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.

Surveyor's Signature: Robin Reymond Date of Survey: 5/9/07

Organization: Pickett, Ray, & Silver, Inc. Position:

Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: <u>3336</u>	Site #: <u>3</u>	Dissolved Oxygen Dissolved Oxygen: <u>14.49</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>26.0</u> (°C)
Weather Conditions: <u>sunny 85°F</u>		
GPS Location: UTM X: <u>674914.426m</u> UTM Y: <u>4257330.724m</u>		
Horizontal Accuracy Estimate (GPS Data Quality): <u>+/- N/A</u> (feet) PDOP: <u>2.6</u>		
Average Stream Width: <u>17.4</u> (meters) Length of Survey Segment: <u>350</u> (meters)		
Field Staff: <u>PRS - RR/MC</u>		

Transect Cross-Section																					
01		02		03		04		05		06		07		08		09		10		11	
Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
0	.12	0	.10	0	.11	0	.36	0	0.6	0	.50	0	.35		>1		>1		>1		>1
1	.11	.75	.12	.9	.13	.75	.38	1.7	.6	2	.50	2.0	.60		>1		>1		>1		>1
2	.10	1.5	.12	1.8	.40	1.5	.72	3.4	.1	4	.55	4.0	.62		>1		>1		>1		>1
3	.01	2.25	.13	2.7	.40	2.25	.70	5.1	.00	6	.70	6.0	.65		>1		>1		>1		>1
4	.00	3.0	.25	3.6	.27	3.0	.68	6.8	.00	8	.70	.80	.70		>1		>1		>1		>1
5	.03	3.75	.31	4.5	.25	3.75	.50	8.5	.11	10	.40	10.0	.62		>1		>1		>1		>1
6	.22	4.5	.31	5.4	.23	4.5	.30	10.2	.10	12	.40	12.0	.52		>1		>1		>1		>1
7	.35	5.25	.30	6.3	.19	5.25	.30	11.9	.01	14	.33	14.0	.60		>1		>1		>1		>1
8	.37	6.0	.25	7.2	.10	6.0	.33	13.6	.10	16	.38	16.0	.63		>1		>1		>1		>1
9	.30	6.75	.26	8.1	.10	6.75	.21	15.3	.15	18	.42	18.0	.50		>1		>1		>1		>1
10	.20	7.5	.18	9	.10	7.5	.13	17	.13	20	.35	20	.35								
10	0.11	7.5	0.25	9	0.19	7.5	0.36	17	.13	20	0.42	20	0.62	20	-	25	-	25	-	30	-
Riffle		Run		Run		Pool		Rifle - braided		Pool		Run		Run		Run		Run		Run	

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.
GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

Signed: Robin Reymond Date: 5/9/07

Site Maximum 1.00

Site Median 0.50



1. WBID 3336 – Site 1 – Transect 1 – facing upstream.



2. WBID 336 – Site 1 – Transect 1 – facing downstream.



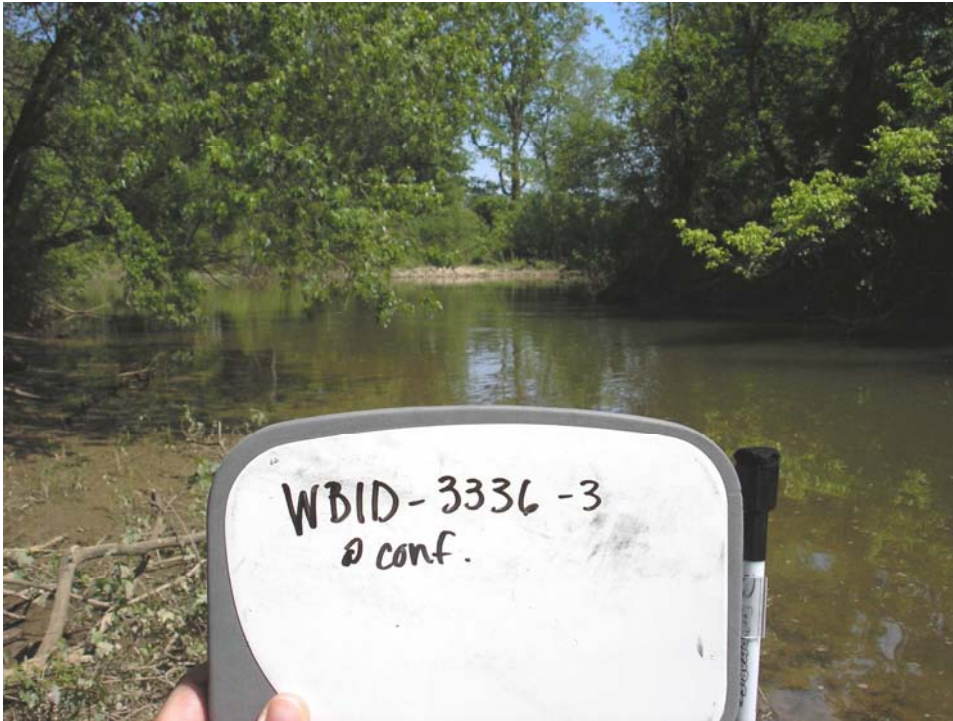
3. WBID 336 – Site 2 – Transect 1 – facing upstream.



4. WBID 3336 – Site 2 – Transect 1 – facing downstream.



5. WBID 3336 – Site 3 – Transect 7, facing right, descending bank.



6. WBID 336 – Site 3 – Transect 11 – near confluence with Bourbeuse River (in background).



7. WBID 3336 – Site 2 – Transect 9 – confluence with Fenton Creek, facing upstream.



8. WBID 3336 – Site 2 – Transect 9 – facing downstream just downstream of confluence with Fenton Creek.